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ABSTRACT

This final report in the Faculty Perception cf Students series is ccncerned with the examination of college students defined as desirable by a consensus of the faculty. A variety of personality and attitude measures, high school rank, freshman grade point average, cumulative grade point average, and rank-in-class, were tested fcr relationship against criteria drawn from frequency of being known to members of the faculty and nomination by faculty to several laudatcry categcries (these latter recorded on Student Nomination Form, see TM 000 181 below). The major component of general acclaim was revealed to be academic performance, although technical difficulties (size cf sample, limited reliability of other criterion measures) may have dampened other potential findings. Inter-rater reliability and the effect cf omitted items on the Student Rating Form are analyzed. The paper concludes with a discussion of some cf the problems enccuntered in the study and speculations regarding the implications for further research. See also TM 000 174 and TM 000 176-179. (DG)

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FACULTY PERCEPTIONS OF STUDENTS

VI. Characteristics of Students for Whom There Is Faculty Agreement on Desirability

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FACULTY PERCEPTIONS OF STUDENTS:

VI. Characteristics of Students for Whom There Is Faculty Agreement on Desirability

Abstract

This final report in the Faculty Perceptions of Students series has concerned, in the main, examination of students defined by a consensus of faculty as desirable. A variety of measures were tested for relationship against criteria drawn from frequency of being known and nomination by faculty to several laudatory categories. The major component of general acclaim was revealed to be academic performance, although technical difficulties (size of sample, limited reliability of other criterion measures) may have dampened other potential findings.

FACULTY PERCEPTIONS OF STUDENTS

VI. Characteristics of Students for Whom There Is Faculty Agreement on Desirability

Purpose

Previous reports in this series (Davis, 1964b; Davis, 1964d) were concerned with faculty definition of desirable student traits. In those analyses, faculty rated students in terms of general desirability and on a number of other traits; the analyses involved, essentially, the determination of reliable variance in the ratings of other traits which might be associated with a parallel rating on the desirability dimension.

Such a study is not handicapped particularly (at least, directly) by differences among faculty in how a particular student is viewed. The concern is with the relationships among various traits as they are perceived by an instructor, with one trait defined as "general desirability," rather than with actual characteristics of students for whom some general identification as desirable might be established.

One purpose of the present analysis is to examine individual faculty ratings and other data on students identified by a faculty consensus of desirability. In addition, other data bearing on the agreement among faculty on trait ratings of students and the relationship of these ratings to other student or faculty characteristics are summarized. Finally, some patterns of absence of information about students are examined, for whatever light this may shed on the nature of faculty interests and values, and of faculty contact with students.

Eight institutions[1] provided samples of faculty raters and students for the study. At each institution a random sample of 50 to 65 students was drawn from the junior or senior class; at one institution an additional random sample of freshmen was drawn.

Two instruments were constructed for this series of studies. One, the Student Rating Form, has already been described in some detail (Davis, 1964a); this form provided, in the main, a list of 80 bimodal traits for rating on a five-point scale. The second instrument, which provides the major focus for this report, was the Student Nomination Form (a sample copy is shown as Appendix A). This form provided (for each institutional group) a list of the names of the sample of students, used in the larger study, with provisions for a faculty member (1) to identify those students in this group whom he (a) knew, or (b) knew "very well"; and (2) to nominate any of these students to one or more of six laudatory descriptions representing degrees or aspects of desirability. These six descriptions involved the categories shown on page A-3 of this report and deal with promise for (1) societal eminence; (2) epitomizing ideals of college; or (3) graduate study; or, with belief that the student showed (4) intellectual growth; (5) personal growth; or that he was (6) otherwise generally desirable as a student. The Student Rating Form, therefore, provided a relatively simple procedure for polling the general faculty and for permitting them to place or fail to place known students in several categories of promise or desirability.

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[1]Amherst, Caltech, Cornell, Dartmouth, MIT, RPI, Rutgers, and Stanford.

Procedure

For each student in the samples, two current instructors[2] (selected randomly from the class lists) were alerted at the beginning (and asked at the end) of a term to rate that student on the Student Rating Form. In addition, at seven of the institutions, an institutional representative identified all faculty who may have had, through assignment to undergraduate courses or any advising responsibilities, contact with any of the students in the sample. At some institutions (e.g., Amherst), all resident active faculty and a number of administrators were approached; at others (e.g., Caltech, where many faculty hold research appointments) only a small portion of faculty listed in the catalog were involved. Some biases may have been operating in the selection of the sample, and surely some faculty were excluded who may have known some of the students. Failure to secure 100% returns also indicates that it is likely that the more cooperative (or those more cordial to social research) participated; yet it is suspected, from comments elicited upon follow-up, that the bulk of nonrespondents simply did not know students in the sample. The numbers of students and faculty involved with the Student Rating Form and the Student Nomination Form are given in Table 1, together with data on returns.

Other data available for all students included Scholastic Aptitude Test scores (SAT-V and SAT-M) (pre-college administration), high school rank (HSR), freshman grade point average (FGPA), cumulative grade point average (CGPA), rank-in-class, and scores from the Myers-Briggs Type Indicator (MBTI) (Myers, 1962) (administered in the student's freshman year). In addition, for one or more of the institutional groups, scores for the following instruments were available: the

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[2]At one institution (Dartmouth) attempts were made to obtain for each student every current teacher and the major adviser.

Table 1

Student Rating Form and Student Nomination Form Returns

Institutional Group	No. Students in Sample	Student Rating Form					Student Nomination Form		
		No. Ratings Requested	No. Ratings Obtained	% Returns	No. Students Rated	No. Raters	No. Ratings Requested	No. Ratings Received	% Returns
Amherst '62	65	123	106	86	62	57	83	73	88
Amherst '65	65	126	104	83	62	41	55	49	89
Caltech '62	52	214	153	71	52	55	105	89	85
Cornell '64	50	100	89	89	50	33	127	123	97
Dartmouth '63	50	263	161	61	46	92	287	217	76
MIT '63	51	102	66	65	45	47	-	-	-
RPI '62	50	120	58	48	40	25	206	169	82
Rutgers '62	50	103	90	87	50	72	116	108	93
Stanford '63	54	140	84	60	41	63	151	130	86
Totals	487	1,291	911	71	445	485	1,130	958	85

Allport-Vernon-Lindzey Study of Values (AVL), the California Personality Inventory (CPI), the Edwards Personal Preference Schedule (EPPS), the Personality Research Inventory (PRI) (Saunders, 1955), the Strong Vocational Interest Blank (SVIB), and the Brown-Holtzman Survey of Study Habits and Attitudes (SSHA).

Preparation of data from the Student Nomination Form. For each institutional group separately, a number of "scores" were extracted from the Nomination Form. These included, for each student in the sample, the number of faculty knowing that student (the "Acquaintance" score); the number of faculty nominating the student to one or more of the desirability categories (the "Desirability Consensus" score); the number of faculty knowing but not nominating the student (the "Undesirability" score); and the number of nominations to each of the six categories of desirability (societal eminence, epitomizing ideals of college, etc.).

Preparation of data from the Student Rating Form. Previous work with the Rating Form (Davis, 1964c) has involved factor analytic study resulting in several rotational solutions to determine the structure of the ratings. The equamax rotation was selected, as the better of the two orthogonal solutions, for providing a basis for factor scores. For each set of ratings, scores for the 18 factors were computed, using a regression weight method. In addition, for each student, the average (over the several sets of ratings) score for the general desirability item (appearing as one of the 80 traits) was computed as a separate measure of desirability.

Analysis of data. Within each institutional group, correlations were computed among the Student Nomination Form indices (Acquaintance, the Desirability Consensus, and Undesirability), SAT-V and SAT-M, High School Rank, Freshman and Cumulative Grade Point Averages, the four continuous scores from

the Myers-Briggs Type Indicator (EI, or Extraversion vs. Introversion; SN, or Sensing vs. Intuition; TF, or Thinking vs. Feeling; and JP, or Judging vs. Perceiving), and the separate desirability rating from the Student Rating Form. In addition, correlations between Nomination Form indices and the scores from the various personality and interest inventories were computed for those groups with data available.

The reliabilities of the items and of the factor scores from the Rating Form were estimated using a special procedure developed by Ebel (1951). This technique, based on analysis of variance, affords a test of agreement among raters, where the identity and number of raters varies from subject to subject. Excluding those students for whom only one set of ratings with 50% or more of the items completed had been obtained yielded 213 students for whom 510 sets of ratings were available. The analysis of rater agreement was conducted with this subsample.

Analysis of variance procedures were used to test for relationship between frequency of nomination to each of the six Student Nomination Form categories on one hand, and, on the other, (1) the 18 factor scores derived from the Student Rating Form, SAT, and high school and college grades; (2) SAT-V and SAT-M; (3) FGPA; (4) the Nomination Form Acquaintance score; (5) the number of items, of the total of 80, omitted on the Student Rating Form; and (6) the Rating Form desirability item score. These analyses were conducted for each institutional group separately and for the combined group. The subgroups of students on the six Nomination Form categories were established by preparing, for each of the six categories and each institutional group, the frequency distribution of number of nominations to that category, and by dividing the group into two parts of as nearly equal size as possible (since frequency of

election to any given category varied substantially from institution to institution, the numerical value of the cutting point varies).

Analysis of variance procedures were also used to explore the relationship between the 18 factor scores and institution, the student's area of academic major, the type dichotomies from the Myers-Briggs Type Indicator, the rank and teaching field of the faculty rater, and a number of categories reflecting extent and kind of contact between the student and his faculty rater.

It should be noted that in the two sets of analyses of variance, the unit of analysis is the set of ratings rather than the student--that is, each separate set of ratings on the Rating Form was treated as a different case. On the Rating Form, raters were given an option to omit items where they felt they had insufficient knowledge or contact to form an opinion. For the analyses involving Nomination Form categories against Rating Form categories and major variables, only those sets of ratings with 50% or more of the items completed were employed (this yielded, for the eight institutional groups, 696 sets of ratings on 398 students by 407 faculty members). For the analyses involving factor scores and institution, academic area of student and rater, and rater contact with student, all available sets of ratings (911) were used (regardless of the number of omitted items).

Finally, it was felt that identification of frequency of omits by item on the Rating Form might illuminate what the faculty members felt were important to observe or had the opportunity to observe. Therefore, tallies were made of frequency of omits by items and of omits among items grouped according to the factor (of 16 rating scale factors) on which they had the highest loading. Also, differences in omits for groups of items were examined by institution,

by class (freshman vs. senior) in one institution with such data, by teaching department, by teaching division of rater, and by college and teaching division of rater. In these analyses, data for one additional institution (Stetson University) were available and were included.

Results and Discussion

Responses to the Student Nomination Form. As might be expected, there were substantial variations among the institutions in the extent to which students were known and nominated to one or more of the six laudatory categories; these variations probably derive primarily from differences in the size of the student body and faculty and thus from the likelihood that a given faculty member would know any particular student. A number of selected comparisons are given in Table 2. It may be seen here that the proportion of faculty respondents knowing one or more students in their institutional sample varied from 41% to 96%, and the proportion nominating one or more students to a laudatory category varied from 31% to 92%. Put another way (rows 10a and 11a, Table 2) the average number of students known by participating faculty members varied among the institutions from 2% to 19% of the sample (or contrariwise, the average student was known by 2% to 19% of the faculty).

Nevertheless, in spite of these variations, virtually all (99%) of the students in the total sample were known by at least one faculty member (row 5), and, even more surprising, virtually all (96%) were nominated (row 6) to one of the six laudatory categories. Similarly, virtually all students were known by one or more faculty members who failed to nominate them (row 9) to any of the six desirability categories. The provision of a form permitting nominations of students may have forced some feeling of compulsion to nominate them,

Table 2

Summary of Selected Types of Responses to the Student Nomination Form

	Amherst '62	Amherst '65	Caltech	Cornell	Dartmouth	RPI	Rutgers	Stanford	Total Group
1. Number faculty responding	73	49	89	123	217	169	108	130	958
2. Number respondents knowing 1 or more Ss	70	46	76	61	153	116	83	53	658
2a. Percent of total number faculty responding	96	94	85	50	70	69	77	41	69
3. Number respondents nominating 1 or more Ss	67	44	71	52	130	89	69	40	562
3a. Percent of total number faculty responding	92	90	80	42	60	53	64	31	59
4. Number students in sample	65	65	52	50	50	50	50	54	436
5. Number students known by at least 1 respondent	65	65	52	50	50	50	50	52	434
5a. Percent of total number students in sample	100	100	100	100	100	100	100	96	99
6. Number Ss nominated by at least 1 respondent	64	59	51	50	50	49	50	47	420
6a. Percent of total number students in sample	99	91	98	100	100	98	100	87	96
7. Number Ss nominated by at least 1 respondent to category 1	37	22	34	19	37	23	18	20	210
7a. Percent of total number students in sample	57	34	65	38	74	46	36	37	48
8. Number Ss nominated by at least 1 respondent to categories 1, 2, or 3	57	37	47	34	41	38	33	27	314
8a. Percent of total number students in sample	88	57	90	68	82	76	66	50	72
9. Number Ss not nominated by all respondents who knew them	65	58	51	43	49	49	37	37	389
9a. Percent of total number students in sample	100	89	98	86	98	98	74	69	89
10. Average number Ss known per respondent	12.5	9.0	7.3	2.8	2.8	3.2	2.5	1.3	
10a. Percent of total number students in sample	19	14	14	6	6	6	5	2	
11. Average number faculty knowing each student	14.0	6.8	12.9	7.0	12.0	10.9	5.4	3.1	
11a. Percent of total number faculty responding	19	14	14	6	6	6	5	2	

although the instructions clearly did not require that known students be nominated; and, those known but not nominated may not have been known very well. Indeed, of 1485 instances where faculty knew students but failed to nominate them, only 101 (or 7%) of these were instances where faculty knew the students "very well." The fact is, however, that for practically every student in the samples there was somewhere at least one faculty member who felt at the least that that student was a desirable student (e.g., one of those who "represent well some qualities and characteristics which make them desirable students for this institution") and another who knew him but failed to nominate him as desirable in any sense.

If only the top three categories are considered (rows 8 and 8a), 72% of the students in the samples were nominated; almost one-half were placed in the most exclusive category which states promise for "substantial contributions to society."

This liberality of nominations may, of course, be influenced not only by the instrument but also by a conviction of faculty members that attainment of admission or upper class status in this college attests promise or desirability. Nevertheless, for the institutions studied, the admissions and/or attrition process, or the simple fact of variety of faculty members, here yields a resounding stamp of faculty approval, somewhere, for virtually every student.

Relationship of nominations indices to other measures. Although each student may have a proponent somewhere among the faculty, there are striking differences in visibility and number of proponents (Table B-1 in the appendix gives some data for a random subsample of Amherst seniors). One may still ask if there are factors associated with visibility and wide recognition of general promise or desirability.

Correlations among the Nomination Form Acquaintance, Desirability, and Undesirability scores, and SAT, grades, Indicator scores, and the desirability rating from the Student Rating Form are given in Tables 3, 4, and 5. The Acquaintance score (number of faculty knowing the student) (Table 3) is, of course, related to the other two Nomination Form scores (the Acquaintance score is the sum of the Desirability and Undesirability scores). The higher relationship of Acquaintance to the Desirability portion may indicate that to know a student is to like him, or it may simply be a function of the greater range of the Desirability score (e.g., for Amherst '62, the standard deviations for desirability and undesirability are 5.2 and 3.2 respectively). Nevertheless, the relationships between Acquaintance and the test score or grade indices are not striking. Only two (of 16) relationships with SAT scores are significant; one relationship is positive and the other negative. A similar picture holds for the high school record. In all cases but one (Amherst freshmen), relationships with college grades are positive, and several are significant at the .05 level. Visible or memorable students could conceivably be those making very high or very low grades, or those very bright or very gross, though scatterplots reveal no evidence of curvilinearity. It is reasonable to assume that many factors affect visibility--numbers of faculty members knowing the student, the son of an illustrious person, the athletic star, the student who wants to become known, may all become visible to many faculty. In itself, the Acquaintance score seems to have no particular meaning in terms of the control variables, except for some slight tendency for faculty to know those with better grades.

The Desirability score (Table 4), on the other hand, seems clearly related to the college grades indices. While the majority of relationships with the

Table 3

Relationship of the Acquaintance Index to Common Variables

			Variables					MBTI				
Institution	Des	Undes	SAT-V	SAT-M	HSR	FGPA	CGPA	E1	SN	TF	JP	SRF Desir
Amherst '62	85**	49**	11	20	13	31*	25*	-01	-01	-02	-17	20
Amherst '65	57**	29*	-10	05	-30*	-05	(-05)	02	-16	-03	-09	-01
Caltech	83**	29*	-19	24	20	17	33*	-14	-09	-11	-22	18
Cornell	71**	42**	-27*	-22	-15	00	05	-23	-24	-34*	-20	14
Dartmouth	90**	48**	31	37*	36*	37*	13	30	33	11	-08	15
RPI	72**	57**	11	12	ND	26	15	08	02	20	02	14
Rutgers	74**	58**	14	17	10	33*	25	-09	16	-11	22	-04
Stanford	88**	59**	11	-01	-14	14	15	22	11	11	08	05

* Significant at .05 level
** Significant at .01 level

Table 4

Relationship of the Desirability Index to Common Variables

		Variables					MBTI				
Institution	Undes	SAT-V	SAT-M	HSR	FGPA	CGPA	EI	SN	TF	JP	SRF Des
Amherst '62	-06	20	20	26*	46**	54**	05	14	-02	-22	17
Amherst '65	-62**	33*	31*	26*	56**	(56)**	10	19	-05	-21	40**
Caltech	-29*	-04	26	28*	46**	67**	-04	-15	-13	-10	47**
Cornell	-34*	-26	-09	-11	29*	38**	-18	-27*	-45**	-31*	47**
Dartmouth	04	29	49**	47**	39*	26	37*	33	03	-10	24
RPI	-17	08	16	N.D.	47**	51**	07	-04	05	-02	32*
Rutgers	-11	23	03	01	53**	55**	-02	17	-16	28*	27
Stanford	14	11	01	-08	25	31*	12	11	21	05	19

* Significant at .05 level
** Significant at .01 level

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Table 5

Relationship of the Undesirability Index to Common Variables

	Variables					MBTI				
Institution	SAT-V	SAT-M	HSR	FGPA	CGPA	EI	SN	TF	JP	SRF Des
Amherst '62	-13	04	-19	-18	-41**	-11	-25*	00	05	08
Amherst '65	-47**	-31*	-59**	-71**	(-71)**	-10	-38**	03	16	-47**
Caltech	-25	-03	-13	-49**	-58**	-16	11	04	-21	-49**
Cornell	-02	-18	-06	-38**	-41**	-07	02	12	13	-42**
Dartmouth	13	-14	-12	06	-23	-05	08	18	04	-14
RPI	07	-02	N.D.	-19	-39*	03	07	23	06	-18
Rutgers	-07	20	14	-15	-30*	-11	04	03	-01	-38**
Stanford	04	-03	-15	-14	-22	26	05	-12	07	-22

* Significant at .05 level
** Significant at .01 level

preadmissions measures are positive, few are significant. Relationships with the Rating Form measure of desirability are all positive, and four are significant; this is striking, considering the fact that the Rating Form desirability score is a single rating or an average of single ratings by two or three faculty members.

If all students had the same number of faculty members knowing them, the Undesirability score would have had, as a reciprocal, perfect negative relationship with the Desirability Consensus score. Except for Amherst freshmen (and perhaps the Caltech and Cornell Groups), these two indices do not appear to be related, in spite of the potential built-in bias. By definition, the Desirability Consensus score focuses on students visible in positive ways, while the Undesirability score focuses on students visible in negative ways; neither may be assumed to identify the student who may be nondescript because he has not impressed himself on many faculty members in any way. Table 5 shows that generally the most recent grade index is most likely correlated with the Undesirability score and that relationships are in the expected direction. The fact that the coefficients between grades and Undesirability are not as high as are the relationships between grades and Desirability would suggest that the unexplained variance for Undesirability leaves more room for qualities not subsumed by the grade criterion. This does not hold for Amherst freshmen, where relationships for Desirability and Undesirability with both grades and preadmissions indices tend to be high; this may indicate that these students simply have not been around enough for faculty to obtain much impression of the personal qualities which assumedly enter into judgment of desirability.

How many faculty members may have consciously attempted to recall academic performance of known students, or checked records before completing the Nomination Form, is not known. Nothing in the instructions or in the

brief task the Nomination Form presented would seem to precipitate a bias that would artificially inflate the relationships with grades.

Yet, whatever frames of reference faculty use in nominating or failing to nominate students, the academic performance level of the student seems a rather substantial predictor of such favor in the eyes of the faculty.

Therefore, it is probably best to conclude that the grade average subsumes many of the qualities faculty consider in making the solicited nominations. Grading is the system of human evaluation in which the faculty are skilled and practiced; these results would indicate that this evaluation is rather pervasive.

The relationships between the indices and scores from the Myers-Briggs Type Indicator (Tables 3, 4, and 5) are relatively uninteresting. An occasional coefficient approaches or reaches significance, though there are no strong evidences of consistency. Myers' (1962) emphasis on the fourfold typology (rather than score continua) as the frame which may produce meaningful results (e.g., the thesis that scores on one of the four indices are likely to behave in an orderly fashion when moderated by the other three), or her frequent finding of curvilinearity in regression, may mean that the present analysis is too gross to permit any significant findings. However, there is no strong evidence that the three Nomination Form scores are related to the continuous scores on the Indicator.

The Nomination Form Desirability Consensus and Undesirability scores evidence relationship in the expected directions with the Rating Form Desirability score. Although these relationships are not markedly high, they appear to contribute reasonable validity to the latter index, where reliability is restricted by the fact that it is in most instances, as noted, a single judgment or an average of two judgments. (In fact, data presented later in this report provide a reliability estimate of r = .29 [see Table 9, page 25, item 80] for this criterion.)

Relationships between the Nomination Form indices and the other test score variables--AVL, CPI, EPPS, PRI, SVIB, and SSHA--were generally nondescript, in that no more significant relationships than would be expected by chance were found and that those significant were inconsistent or lacking obvious logic.

Data from the Allport-Vernon-Lindzey Study of Values were available for the Amherst senior and RPI groups. Correlations between the three Nomination Form indices and the six AVL scores are shown in Table 6.

Table 6

Relationships between AVL and Nomination Form Indices for Amherst and RPI Samples

	Amherst (N=62)			RPI (N=37)		
AVL Index	Acq.	Des.	Undes.	Acq.	Des.	Undes.
Theoretical	25	22	11	30	07	34
Economic	02	-08	17	-10	-06	-08
Aesthetic	00	05	-08	19	03	23
Social	-07	05	-21	-02	09	-14
Political	-12	-19	10	-01	-05	04
Religious	-07	-04	-07	-21	-05	-23

At Amherst, the Theoretical scale was related significantly to SAT-M (r=.36), the Economic scale related significantly to SAT-V (r=.50), SAT-M (r=-.33), HSR (r=-.32), FGPA (r=-.45) and CGPA (r=-.44), and the Aesthetic scale related significantly to SAT-V (r=.48). In these instances at RPI, relationships were in the same directions, but none were statistically significant. There may be tendencies for students scoring high on the Theoretical scale to be more visible; on the other hand, the patterns are not sufficiently established that any brief could be held for students' values as here measured affecting their visibility or desirability.

Data from the California Personality Inventory were available for the Stanford Sample. For the 18 CPI scales and the three Nomination Form indices, only five of the 54 intercorrelations reached or exceeded a value of r=.15, and no relationships were significant. The Edwards Personal Preference Schedule data were available for Amherst freshmen and for Amherst seniors. For its 15 scales and the three indices, only five of the 45 intercorrelations reached or exceeded a value of r=.15 for the seniors with only one of these five significant. For the Amherst freshmen, nine of the 54 intercorrelations reached or exceeded r=.15, and none were significant.

The Survey of Study Habits and Attitudes, available for Amherst seniors, proved somewhat more interesting: relationships of the SSHA score with Acquaintance, Desirability, and Undesirability were, respectively, r=.00, .19, and -.32, the latter being significant at the .01 level. As in the studies reported in the manual (Brown and Holtzman, 1956), relationships of the SSHA with ability scores are negligible, while relationships with grade performance are moderate and positive (e.g., for SSHA and cumulative GPA, r=.32); this means, however, that the relationship between SSHA and Undesirability, for example, may be explained by their mutual dependence on grades.

Strong Vocational Interest Blank (scored on 48 scales) data were available for the Stanford group; of the 144 intercorrelations with the three Nomination Form indices, only two were significant (correlations in the minus fifties between the Parmacists' scale and Acquaintance and Desirability). Of course, there are too many variables, too few cases, and too little substance for anything to be made of these results.

An exception to the general trend of these findings is provided by the Personality Research Inventory data from the Cornell School of Engineering

group. Correlations between the Acquaintance score, the three desirability indices, and the 25 PRI scales are given in Table 7 (for a description of these scales, see Saunders [1955]). In spite of the low reliability (Messick, 1962) of the PRI scales, and the fact that this self-report inventory was administered three years prior to the time ratings and nominations were obtained, a number of interesting findings emerge.

The engineering student known by many faculty (from the Acquaintance score) appears to be one who describes himself as talkative, possessing social know-how, who is practical rather than artistic, and who is not concerned with mental exercise for its own sake. The valued student (from the Desirability and Undesirability scores) describes himself as lacking in insight, anxious, patient or tolerant of frustration, able to control impulses, altruistic, finding zest for completion of tasks (attitude toward work), not concerned with status as such, socially knowledgeable and extroverted, practical, and disdaining the sort of intellectual interest that marks the stereotype of the ideal liberal arts student. In terms of the item content of these scales, we find that the faculty like students who describe themselves as preferring prose over poetry, newspapers over books, photography over painting, and popular over classical music. These favored students do not see themselves as venturesome, having a sense of humor or self-understanding, having interest in developing a personal philosophy of life, nor do they enjoy "thinking hard." And, they would rather use a computer than design a new one.

Although the numbers are small and replication (perhaps with a bolstered PRI) is highly desirable, the suggestion is that the student's report of needs, drives, and expectancies through the PRI may prove a useful tool in predicting faculty reaction to him. Institutional factors may be a part of such

Table 7

Relationship of PRI Indices to Acquaintance and Desirability Indices
(Cornell School of Engineering; N=50)

Scale	(ACQ.)	(UNDES.)	(DES.)	SRF DES.
1. Insightful	-06	27*	-27*	-24
2. Anxiety	-15	20	-31*	-08
3. Self-accepting	-02	20	-17	-20
4. Tolerant of frustration	-01	-28*	21	05
5. Tolerant of ambiguity	-24	-09	-18	-10
6. Compulsive	-02	-03	00	00
7. Impulsive	-16	26	-37**	-33*
8. Altruistic	18	-18	32*	09
9. Talkative	39**	19	26	04
10. Self-sufficient	-06	-08	00	22
11. Gregarious	12	-06	18	10
12. Conformity in handling aggression	18	-05	22	-03
13. Attitude toward work	18	-15	31*	27*
14. Foresight	14	-02	16	-17
15. Belief in individual freedom & responsibility	-16	-24	02	-18
16. Belief in over-all group values	-15	-22	01	12
17. Social conscience	16	-01	17	03
18. Status aspiration	22	27*	02	-12
19. Social know-how	32*	01	33*	00
20. Social status	25	-02	27*	15
21. Masculine vigor	25	10	18	16
22. Artistic vs. practical	-30*	06	-35**	-28*
23. Spiritual vs. material	-13	-23	05	09
24. Progressive vs. conservative	-03	09	-10	02
25. Liking to think	-27*	-01	-27*	-21

* Significant at .05 level
** Significant at .01 level

relationships, however, for the Cornell group also produced three (of five) significant relationships between the Desirability score and MBTI indices (desirable students more sensing than intuitive, more thinking than feeling, and more judging than perceiving). The raters at Cornell consisted of the entire engineering faculty; this homogeneity, as well as the homogeneity of program and students, may also be a factor in these relationships.

Relationship of nomination to laudatory categories to the major variables. The Rating Form provided not only the three indices discussed to this point, but also six different ways of describing promise or desirability: (1) societal eminence, (2) epitomizing institutional goals, (3) promise for graduate study, (4) intellectual growth, (5) personal growth, and (6) otherwise desirable. The summary of the analyses of variance for groups derived from frequency of nomination to these categories against SAT, FGPA, the Myers-Briggs continuous scores, the Acquaintance score, the number of omitted items, and the average of the Rating Form criterion of desirability are presented in Table 8. This table provides the F ratios for those comparisons where significant differences in means on the variables were found for the more frequently vs. less frequently nominated groups, together with a symbol indicating direction of the difference. Here, the symbol " >" indicates the higher mean on the variable in question was obtained by the more frequently nominated group, and the symbol " <" indicates the higher mean was obtained by the less frequently nominated group.

The most notable and consistent finding for the institutional groups considered separately is the finding that those nominated more frequently in the first three categories have (or had) higher freshman grade point averages in all instances except for categories 2 and 3 at RPI and category 1 at Stanford. Again, academic performance is verified as the major universal component of

Table 8

Summary of Analyses of Variance: Significant F Ratios and Direction of Difference for Control Variables against Nomination Form Criteria

GROUP	CATEGORY	N<	N>	SAT-V	SAT-M	FGPA	EI	SN	TF	JP	ACQ. SCORE	NO. OMITS	SNF Desirability
Amherst '62	1	42	55			>20.0*							>12.2*
	2	48	49	> 6.1		>11.3*	> 4.5						
	3	37	60	> 5.5		>22.7*		> 7.2*					> 5.5
	4	52	45										
	5	62	35					<10.0*					
	6	42	55	< 5.0	< 4.5	< 5.7				< 4.4		< 5.4	
Amherst '65	1	46	27	>16.3*		>13.3*		> 5.1					> 6.7
	2	33	40			>31.7*							> 7.0*
	3	43	30		> 5.8	>26.3*							> 5.4
	4	33	40	>13.9*	> 6.0	>11.5*		> 4.1			> 5.6		
	5	32	41								> 4.7		
	6	34	39				> 5.0						> 8.5*
Caltech	1	65	49			>39.2*							>29.0*
	2	51	63			>20.8*			<17.2*				>21.1*
	3	47	67			>39.4*			< 4.7				>44.0*
	4	65	49			>13.5*		<11.2*	< 7.5*				
	5	42	72					< 7.3*		<11.6*			
	6	61	53	< 5.0	>14.8*					<11.3*			
Cornell	1	30	27			>16.2*			< 8.9*				>11.5*
	2	22	35			>12.4*			< 8.2*				> 7.7*
	3	26	31			>18.9*				< 8.3			>26.0*
	4	26	31		<14.0*	< 8.7*							
	5	33	24		< 9.0*								
	6	34	23			<11.7*					< 6.6		
Dartmouth	1	64	73	> 7.0*	>12.2*	>15.8*	>14.6*	> 5.3			> 5.5	< 5.8	>17.7*
	2	54	83	> 8.2*	> 6.6	>22.8*	>18.9*				> 7.8*		
	3	57	80	>21.0*	>4.5*	>33.3*	>27.5*	> 9.8*			> 5.6		> 6.8
	4	40	97			>14.5*		> 5.1					
	5	46	91	< 9.8*	< 6.1		<10.9*			<12.6*			
	6	40	97	> 8.9*	> 6.2		> 6.6						
RPI	1	25	26			>14.3*	> 5.8						
	2	17	34							< 4.4			
	3	27	24				> 6.0						> 5.3
	4	22	29		< 6.7						> 8.8*	< 4.7	
	5	22	29										
	6	20	31				> 4.7						
Rutgers	1	41	31	>11.0*		>41.6*							> 6.6
	2	32	40			>33.4*						> 4.5	> 6.0
	3	27	45			>13.7*			< 6.4			> 4.1	> 4.2
	4	36	36										
	5	21	51	< 6.8									
	6	25	47							>18.0*			
Stanford	1	31	23		< 8.8*								
	2	36	18		> 4.1	> 8.0*							
	3	27	27	> 4.8		>48.5*		> 5.2	> 6.5				
	4	23	31										
	5	29	25				<10.0*			< 8.6*			
	6	35	19		< 8.7*								
COMBINED GROUP	1	344	311	>13.9*		>139.9*		>10.3*			>15.1*	< 3.9	>80.6*
	2	293	362	> 6.3		>120.6*	> 5.0		< 5.6		> 5.6		>37.2*
	3	291	364	>13.4*	> 8.0	>168.2*	> 7.0*	>18.2*			> 9.2*		>84.8*
	4	297	358			> 16.6*							> 9.6*
	5	287	368	<13.3*	< 8.9*		< 8.2*	<12.0*		<19.2*			
	6	291	364										

NOTE: For this specific analysis, each student was counted in as many times as he had SNF ratings.

desirability as a student. The Student Rating Form desirability score, again with the exception of RPI and Stanford, also tends to confirm nomination to the first three categories. The SAT is not so clear-cut as a component of the nomination to laudatory categories, except at Dartmouth; here, it is particularly apparent in the nominations for promise for graduate study (category 3).

The Myers-Briggs Type Indicator continuous scores produce generally no orderly and consistent patterns, except at Dartmouth where those students more frequently nominated in categories 1, 2, 3, and 6 appear more introverted, and those nominated for personal growth more extroverted.

For the combined institutional group, the differences are clearer. Academic performance and SAT-V stand out nicely for the first three categories. The personal growth category appears reserved for those with lower SAT-V and SAT-M scores and/or for the extroverted-sensing-judging (or ES_J) "types." The Rating Form criterion of desirability is again confirmed for the first four categories. Category 6 does not, for the combined group, seem related to any of the variables.

Inter-rater agreement on Student Rating Form indices. It was suspected from the beginning of work with the Rating Form that agreement among raters on a particular student would be limited. Some special care was therefore taken to ensure good ratings: raters dealt with students in current classes, knew two to three months ahead the precise nature (and content) of the task facing them at the close of the term, and were warned, through special instructions, of the common errors in rating. Yet, the Rating Form was based on the language (or, more exactly, labels) faculty use in referring to students rather than on behavioral description; there were no formal, standard observational situations, and kind and degree of contact varied. For example, at Rutgers, one instructor

invited his ratees home for dinner and questioned them extensively on a range of topics; another reported limited confidence in his evaluations--as an art instructor working entirely with slides, he taught his classes in the dark and had never seen his subjects. Also, previous study of a sample of students at MIT rated on an earlier Rating Form used in this series revealed that marked disagreement between two raters could be explained frequently by a single, dramatic event (e.g., falling asleep in one class) which colored many of the "separate" trait evaluations. And finally, note must be taken of the fact that, after all, contact between instructor and student in most natural college settings is rather limited indeed.

The results of the analysis of rater agreement on the 80 items of the Rating Form are presented in Table 9; the reliabilities of the factor scores are presented in Table 10. Although, considering all aspects of the situation, the item reliabilities appear reasonable, the composites provided by the factor scores are not reliable enough for any confidence. It should be recalled that the factor scores were computed by a regression method, and that each, therefore, is based on various combinations of 84 variables: the 80 items of the Rating Form, SAT-V, SAT-M, HSR, and FGPA. For the factors defined principally by SAT and by grades, reliabilities would be perfect were it not for the error introduced by the ratings--for, in this analysis, a student could have two different ratings but only one score or grade average of record (thus, the "reliability" of these two factors can be discounted). Future studies involving scores based on combinations of trait ratings, if warranted at all, should probably involve simple addition of item scores, perhaps following a less complex structure such as that suggested by second-order factor analysis (Davis, 1965e).

Table 9

Reliability of Ratings for Individual Items*

Item	Content	Reliability
49	intellectually quick	.42
1	high academic performance	.41
37	makes good grades with ease	.38
73	high intellectual curiosity	.36
56	high motivation to achieve	.33
28	good at analyzing	.32
34	interested in ideas	.32
21	intellectually mature	.31
33	willing to ask questions	.31
13	above average ability	.31
22	eager to learn	.31
10	has broad intellectual interests	.31
70	a serious student	.31
26	self-disciplined	.30
71	placid	.30
80	the kind of student this institution should admit	.29
46	reads widely	.29
52	creative	.29
16	shows originality	.28
50	industrious	.27
4	imaginative	.27
38	thorough	.27
40	deep	.27
25	good grasp of abstract	.27
61	performs to top of ability	.27
24	conventional	.26
2	works steadily	.26
6	gregarious	.26
79	high level of physical energy	.26
19	honest	.25
14	meets deadlines	.25
64	intellectually versatile	.24
20	socially mature	.24
31	self-directing	.23
5	pleasant	.22
7	independent	.22
76	modest	.22
48	orthodox in behavior	.22
53	stable	.21
65	affable	.21
36	low need to stand out	.21
74	at home in college culture	.21
17	cooperative	.20
32	personal goals clear	.20
39	not status-centered	.20

Table 9(continued)

Item	Content	Reliability
15	interested in others	.20
69	open to new experience	.19
78	good sense of humor	.19
12	conforming	.19
3	high interest in chosen field	.19
67	principled	.18
23	calm	.17
18	active in campus life	.17
8	culturally rich	.17
42	extroverted	.16
45	open-minded	.16
30	leader among peers	.16
63	optimistic	.15
60	accepts majority values	.15
44	sophisticated	.14
51	high concern for welfare of others	.13
72	has few idiosyncrasies	.13
58	realistic in outlook	.13
43	acts ethically	.12
41	willing to take direction	.12
9	flexible	.11
62	completes undertakings	.11
27	altruistic	.11
29	likeable	.11
66	works well with others	.11
77	generally objective in forming opinions	.10
75	high respect for human dignity	.10
68	values like those of faculty	.09
47	good self-understanding	.09
35	happy	.09
57	fair-minded	.07
54	liked by peers	.05
55	low need for reassurance	.05
59	positive family influence	.05
11	seldom worries	.01

*For definition of reliability coefficients and sample, see description of procedure on page 6 of this report.

Table 10

Reliability of Ratings for Factor Scores*

Factor	Reliability
SAT	.92
Grade achievement	.77
Extraversion	.29
Intellectual ability	.21
Ethicality	.20
Intellectual values	.19
Status-centeredness	.17
Maturity	.16
Conformity	.15
Likeableness	.12
Altruism	.12
Dependability	.12
Popularity	.08
Self-insight	.08
Motivation	.08
Anxiety	.06
Self-sufficiency/creativity	.04
Open-mindedness	.03

*For definition of reliability coefficients and sample, see description of procedure on page 6 of this report.

Therefore, no special note is taken of the analyses of Nomination Form indices against Rating Form indices. Summaries of the analyses of variance for Rating Form factor scores against the six Nomination Form categories and the other variables (teaching field of rater, kind of contact with ratee, etc.) are presented in Appendix C, together with brief comment.

Analyses of omitted items on the Student Rating Form. The frequency with which each of the 80 items on the Rating Form was answered with a "don't know" rather than with an evaluation is given in Table 11, which is based on the total group of ratings. Of first interest is the variation in the range of proportion of omits: the least frequently omitted item (pleasantness) was absent in only 6% of the rating sets, while the most frequently omitted item (quality of family influence) was absent in 84% of the rating sets.

Of greater interest, however, are the general kinds of items seldom omitted vs. the general kinds frequently omitted. The least frequently omitted items have to do with the student's general interpersonal impact on the instructor (pleasantness, likeableness, cooperativeness, affability), his academic ability and performance, and his industry in assigned tasks. On the other hand, the most frequently omitted items involve the student's role on campus or among peers; intrapersonal qualities, such as self-understanding, status-centeredness, or tendency to worry; and items having to do with altruism. The latter is somewhat surprising, as is the 65% omit on breadth of reading; faculty members, particularly in the liberal arts, might be expected to be tremendously concerned about these areas. If they really are, they find observations and evaluations of the student in these terms difficult to make. In the case of altruistic values of students, faculty may be hesitant to press their inquiry far into the conscience and away from the intellect, and self-regard characteristics would be hard to observe or infer. The absence of

Table 11

Student Rating Form Items Ranked by Frequency of Omits
for Upperclass Groups in 1962 CSCS Sample* Ratings (N=973)

Item No.	Trait	% Omits	Item No.	Trait	% Omits
5	Pleasantness	6.1	25	Grasp of abstract	29.0
1	Academic performance	7.2	69	Openness to new experience	29.1
29	Likeableness	8.0	56	Motivation to achieve	29.5
13	Ability	8.1	20	Social maturity	29.7
33	Willingness to ask questions	9.2	79	Level of physical energy	29.7
17	Cooperativeness	10.6	12	Conformity	30.1
22	Eagerness to learn	11.0	52	Creativity	30.7
70	Seriousness as student	11.1	40	Depth	31.4
50	Industry	11.5	31	Self-direction	31.6
76	Modesty	12.1	43	Ethical	33.0
65	Affability	12.3	10	Intellectual interest	33.2
49	Intellectual quickness	12.6	64	Intellectual versatility	33.6
38	Thoroughness	14.6	44	Social sophistication	33.9
71	Argumentativeness	14.7	67	Principled	34.0
23	Tenseness	14.9	57	Fair-mindedness	35.7
14	Meeting deadlines	15.5	77	Objectivity	35.9
41	Willingness for direction	16.2	58	Realism of outlook	36.4
21	Intellectual maturity	17.3	72	Idiosyncratic	36.6
4	Imaginativeness	17.6	35	Happiness	37.2
61	Performance per ability	17.6	63	Optimism	37.8
28	Analytical ability	17.7	15	Self-centeredness	40.6
73	Intellectual curiosity	18.0	32	Clarity of personal goals	41.5
34	Interest in ideas	18.8	8	Cultural richness	42.0
2	Steady work	19.6	30	Leadership among peers	43.1
16	Originality	20.3	66	Ability to work with others	43.2
78	Sense of humor	20.9	36	Need to stand out	44.1
62	Completes undertakings	21.0	54	Liked by peers	45.8
53	Stability	22.2	55	Need for reassurance	46.4
48	Orthodoxy (in behavior)	22.5	60	Acceptance of majority values	47.9
42	Extraversion	22.6	68	Values like faculty	48.3
24	Conventionality	23.3	47	Self-understanding	50.5
7	Independence	23.5	75	Respect for human dignity	50.5
45	Open-mindedness	23.6	11	Tendency to worry	51.4
26	Self-discipline	24.0	18	Participation in campus life	53.8
6	Gregariousness	25.0	51	Concern for others' welfare	56.1
19	Honesty	25.4	39	Status-centeredness	56.8
37	Ease in taking grades	25.6	27	Altruism	59.9
9	Flexibility	27.5	46	Breadth of reading	64.7
74	Ease in college culture	28.0	59	Quality of family influence	84.1
3	Interest in chosen field	28.5			

* Amherst, Caltech, Cornell (Engineers), Dartmouth, MIT, RPI, Rutgers, Stanford and Stetson

knowledge about breadth of reading--confirmed by relatively frequent omission of intellectual interest, versatility, and "values like faculty"--tends to suggest that in the playing out of most courses, faculty do not or cannot press hard to probe these depths. Instead, they react to the student in terms of his personal warmth, his academic ability and performance, and his orderly and thorough attention to assignments.

Table 12 shows the proportion of omits by institution and for the 79 items[3] grouped in terms of the factor on which they had the highest loading. Of primary interest is the variation by institution as well as the previously noted variation by type of item. For the former variation, both Stetson and Amherst faculty omitted fewer than 20% of all items, while the proportions exceed 40% for Stanford, Cornell, and MIT. With regard to variation by factor cluster, it is interesting to note that three areas found previously (Davis, 1964b; Davis, 1964d) to be associated with desirability apart from grades (ethicality, intellectual values, and altruism) are in the most frequently omitted half of the distribution, while likeableness is the least frequently omitted factor cluster. Perhaps some attention might be given to ways of facilitating the visibility of these other qualities within the structure of upper-class course work.

The institutions (columns) and factor cluster areas (rows) in Table 12 are ordered in terms of frequency in the total compilations. Within the ranks across rows or columns there are some interesting variations. These may be more readily observed from data presented in Table 13, where the variation

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[3]The general desirability item was omitted from these analyses.

Table 12

Percent of Omits for Factor Groupings of Items, by College
(Based on 79 items, 973 ratings, 1962 CSCS Upperclass Sample)

	STETSON	AMHERST	RPI	DARTMOUTH	RUTGERS	CALTECH	STANFORD	CORNELL	MIT	ALL COLLEGE TOTAL
G. Likeableness	2.3	2.1	7.8	5.3	5.8	11.4	19.6	22.2	18.2	9.2
B. Intel. abil.	10.3	4.1	12.4	16.9	11.1	24.0	30.4	21.3	23.5	16.7
A. Dependability	8.7	8.0	13.3	15.4	16.0	20.9	33.0	27.1	32.5	18.0
H. Extraversion	11.8	16.2	16.7	19.9	20.5	25.1	35.5	34.3	40.3	22.8
F. Motivation	13.1	16.8	22.4	23.6	23.6	26.7	41.0	37.8	44.2	25.7
I. Self-sufficiency	16.7	13.2	24.1	22.0	21.5	26.8	39.1	45.5	40.7	25.9
L. Maturity	12.2	15.8	30.6	19.7	25.3	29.1	44.0	46.3	49.6	27.2
J. Open-mindedness	17.0	16.0	27.3	26.4	27.8	31.2	41.3	46.1	48.9	29.2
E. Ethicality	18.9	23.0	16.1	26.5	32.6	27.2	52.0	44.9	56.6	30.8
C. Conformity	19.8	22.8	21.7	28.7	31.6	34.9	46.7	44.7	53.9	32.1
N. Anxiety	22.4	25.8	26.2	31.6	40.9	35.8	44.8	50.1	46.1	34.4
D. Intel. val.	21.4	18.6	40.8	28.8	25.0	41.1	49.4	59.4	55.1	35.1
R. Status-cent.	28.7	24.8	33.9	33.3	38.9	40.7	48.4	51.7	53.5	37.7
M. Popularity	24.7	44.8	27.6	46.1	55.0	46.1	69.3	56.7	67.4	46.5
K. Altruism	34.5	40.1	40.9	51.2	55.6	51.6	66.1	72.2	74.2	51.8
Q. Self-insight	40.6	45.9	60.9	56.9	64.1	60.8	69.4	74.9	79.3	58.7
No. Ratings	166	106	58	161	90	153	84	89	66	973
% Items Omitted	17.6	19.2	25.0	26.5	28.5	31.9	43.7	44.0	46.8	29.6

Table 13

Ratios of Observed Over Expected Frequencies of Omits
by Factor Grouping and College (1962 CSCS Upperclass Sample)

	AMHERST	CALTECH	CORNELL	DARTMOUTH	MIT	RPI	RUTGERS	STANFORD	STETSON	Σf_r	% of Total R's Possible for Category
A. Dependability	.68	1.08	1.01	.95	1.15	.87	.93	1.24	.81	1225	18.0
B. Intel. abil.	.38	1.33	.86	1.12	.89	.88	.69	1.23	1.04	975	16.7
C. Conformity	1.10	1.01	.93	1.00	1.07	.80	1.02	.98	1.04	1561	32.1
D. Intel. values	.81	1.09	1.14	.91	1.00	1.38	.74	.95	1.02	2047	35.1
E. Ethicality	1.14	.82	.98	.96	1.17	.62	1.10	1.14	1.03	899	30.8
F. Motivation	1.01	.97	.99	1.03	1.09	1.03	.95	1.08	.86	1249	25.7
G. Likeableness	.36	1.15	1.61	.64	1.23	1.00	.66	1.43	.42	360	9.2
H. Extraversion	1.09	1.02	1.01	.97	1.11	.87	.93	1.06	.87	1556	22.8
I. Self-sufficiency	.79	.96	1.18	.95	.99	1.11	.87	1.03	1.08	1510	25.9
J. Open-mindedness	.84	.99	1.06	1.01	1.06	1.11	.99	.96	.98	1991	29.2
K. Altruism	1.20	.93	.94	1.10	.91	.93	1.12	.86	1.12	2015	51.8
L. Maturity	.89	.99	1.15	.81	1.15	1.34	.97	1.10	.76	1059	27.2
M. Popularity	1.48	.92	.82	1.11	.92	.70	1.23	1.01	.90	1808	46.5
N. Anxiety	1.16	.97	.98	1.02	.85	.90	1.23	.88	1.09	1674	34.4
Q. Self-insight	1.21	.96	.86	1.08	.85	1.23	1.14	.80	1.16	1713	58.7
R. Status-cent.	1.01	1.01	.92	.99	.90	1.05	1.07	.87	1.28	1100	37.7
Σf_c	1607	3852	3095	3376	2438	1147	2024	2898	2305	22742	29.6
% of Total R's Possible for Instit.	19.2	31.9	44.0	26.5	46.8	25.0	28.5	43.7	17.6	29.6	

Note: "Expected" frequencies for each cell were obtained in the conventional manner, by multiplying column frequency by row frequency over total frequency.

which is influenced by both institutional and item content total proportions is taken into account through the computation of an expected frequency and the reporting of the observed-over-expected ratios. A ratio below 1.00 shows, of course, that the factor cluster was less frequently omitted than would have been predicted from the total from the institution and the content area. The data generally are reasonable in terms of the nature of the institution and are worthy of careful study by the reader.

In one instance (Amherst), parallel groups of freshmen vs. seniors were available. Raters were not identical, of course, but there was some overlap. Results of a comparison, by factor cluster of items, for the two classes is given in Table 14. In most instances, there is fairly uniform gain in presumed knowledge of the students, and the seniors are much better known than are the freshmen. This is reasonable, of course; but, it also tends to confirm an element of conscientiousness and caution by the raters.

Of final interest in the analysis of omits are the tabulations by factor cluster and teaching department of rater (Table 15) or teaching division (Tables 16 and 17). Interpretations of these analyses must be qualified by the general origin of the content of the Rating Form. For example, one earlier study concerned with faculty descriptions of desirable student behavior in a department of education (Myers, 1959) produced content for ratings that was quite specific to that department, and quite different from that of the Rating Form. Also, departmental differences may stem from differences among students rather than among faculty, as most instructors rated, in the upper-class samples, their own majors.

In Table 15, there is considerable variation by department, from 4% total omits for ROTC instructors (who must be accustomed to observation and trait

Table 14

Percent of Omits for Factor Groupings of Items: Amherst Freshmen vs. Amherst Seniors

	FRESHMEN	SENIORS	SCALE TOTALS
C. Likeableness	5.8	2.1	3.9
B. Intel. abil.	10.6	4.1	7.3
A. Dependability	15.2	8.0	11.6
I. Self-sufficiency	32.7	13.2	22.9
H. Extraversion	29.9	16.2	23.0
L. Maturity	35.3	15.8	25.5
D. Intel. values	33.7	18.6	26.0
J. Open-mindedness	36.5	16.0	26.2
F. Motivation	39.6	16.8	28.1
G. Conformity	39.6	22.8	31.1
N. Anxiety	48.1	25.8	36.9
R. Status-cent.	51.3	24.8	37.9
E. Ethicality	57.1	23.0	39.8
K. Altruism	71.9	40.1	55.8
M. Popularity	74.0	44.8	59.3
Q. Self-insight	79.2	45.9	62.4
(No. Ratings)	(104)	(106)	
Group Totals	37.7	19.2	28.4

Table 15

Percent of Omits for Factor Groupings of Items, by Teaching Department of Rater (Selected Departments only)*

DEPARTMENT	N	A DEP	B I A	C CNF	D I V	E ETH	F MOT	G LIK	H EXT	I SSC	J O M	K ALT	L MAT	M POP	N ANX	Q S I	R S C	TOTAL	COLLEGES REPRESENTED IN SAMPLE**
Chemical Engineering	26	22	18	40	42	36	31	20	30	33	34	55	36	38	41	58	42	34	2,3,5,6
Electrical Engineering	64	26	20	47	62	34	37	19	33	42	44	78	51	60	48	80	47	43	2,3,5,6,8
Mechanical Engineering	55	23	19	34	48	39	32	13	24	35	39	60	36	46	36	65	43	35	2,3,5,6
Art	23	14	09	31	28	36	25	09	26	20	27	48	20	42	39	52	36	27	1,4,7,8,9
English	109	13	12	25	14	32	22	05	22	15	22	47	15	49	33	58	34	24	1,2,4,5,7,8,9
Romance Languages	29	07	09	37	24	39	25	00	28	28	31	60	30	70	50	71	38	31	1,4,7,8,9
Music	27	10	15	13	33	12	19	00	12	14	22	24	13	24	24	43	20	18	1,4,5,7,9
Philosophy	26	23	12	30	29	35	25	09	21	24	22	45	24	66	29	62	26	28	1,2,4,5,7,8
Biology	36	08	11	18	23	19	15	06	13	09	18	41	19	31	28	55	32	19	1,2,4,6,7,8,9
Chemistry	43	34	28	43	55	56	34	10	25	41	55	61	42	51	41	73	49	42	1,2,4,5,6,7,8,9
Mathematics	59	21	16	46	43	41	32	16	34	31	43	67	32	61	46	63	48	38	1,2,4,5,7,8,9
Physics	51	20	19	39	43	29	27	13	33	32	35	61	40	53	42	67	51	36	1,2,4,5,6,7,8,9
ROTC	27	01	06	06	07	01	10	00	02	04	02	07	02	07	03	17	04	04	4,8,9
Business Administration	34	03	10	19	27	08	08	02	12	19	14	45	11	24	24	34	36	17	9
Speech and Drama	20	09	12	12	16	28	21	01	06	12	13	40	08	22	22	40	20	16	1,4,7,8,9
Health and P.E.	30	31	49	35	51	24	44	09	20	38	35	46	31	34	23	52	28	35	4,8,9
Economics	77	22	13	47	41	43	28	11	29	37	36	68	34	72	43	67	52	38	1,2,4,5,7,8,9
History	85	24	23	33	36	46	34	07	28	33	33	65	37	60	45	73	45	36	1,2,4,5,7,8,9
Political Science	27	17	12	30	25	32	27	10	23	22	26	51	24	54	40	63	35	28	1,4,5,7,8
Psychology	24	20	17	33	30	36	22	09	20	26	26	48	26	49	30	50	24	28	1,4,7,8,9
ALL FACULTY, ALL COLLEGES	1,077	18	17	33	35	33	27	09	24	27	30	54	28	49	36	61	39	30	

* Departments not shown where N< 20.

** College Code: Amherst, 1; Caltech, 2; Cornell, 3; Dartmouth, 4; MIT, 5; RPI, 6; Rutgers, 7; Stanford, 8; Stetson, 9

Table 16

Percents of Omits for Factor Grouping of Items, by Teaching Division: Total 1962 CSCS Sample

Division	N	A DEP	B I A	C CNF	D I V	E ETH	F MOT	G LIK	H EXT	I SSC	J O M	K ALT	L MAT	M POP	N ANX	Q S I	R S C	TOTAL
Engineering	217	22	19	39	52	36	32	16	28	35	37	62	40	49	39	69	46	37
Humanities	288	13	12	29	22	32	25	04	21	20	24	49	19	51	34	59	34	26
Natural Sciences	215	21	18	37	41	35	29	12	27	28	37	56	32	48	40	63	44	34
Professional Fields	111	10	19	19	26	12	18	03	11	18	16	32	13	22	16	35	21	18
Social Sciences	242	20	16	35	34	41	28	08	25	30	30	60	31	60	40	65	42	33
TOTAL	1,073*	18	17	33	35	33	27	09	24	27	30	54	28	49	36	61	39	30

* Teaching field unknown for 5 raters

Table 17

Percent of Omits for Factor Groupings of Items, by College and Teaching Division[1]

DIVISION	N	A DEP	B I A	C CNF	D I V	E ETH	F MOT	G LIK	H EXT	I SSC	J O M	K ALT	L MAT	M POP	N AES	Q S I	R S C	TOTAL
Amherst																		
Humanities	101	12	09	30	21	41	29	03	24	24	26	56	24	60	39	63	40	29
Natural Sciences (incl. Psychology)	52	09	05	35	34	36	26	06	23	20	28	47	24	50	35	60	33	27
Social Sciences	57	12	07	29	27	42	28	03	21	24	25	63	29	67	36	64	39	29
Caltech																		
Engineering	37	16	19	36	43	19	23	07	20	23	29	53	26	45	33	58	40	29
Humanities (incl. Economics & History)	63	15	21	24	32	23	23	05	17	20	21	37	17	38	27	57	30	24
Natural Sciences	53	32	31	46	50	38	34	23	38	37	44	68	46	56	49	68	55	43
Cornell																		
Chemical & Metallurgical Engineering	17	31	23	49	52	59	41	31	45	47	47	60	51	50	49	59	55	45
Civil Engineering	8	04	08	32	46	29	22	03	21	19	32	66	25	56	32	62	42	29
Electrical Engineering	27	32	24	47	65	31	44	29	37	44	43	82	50	55	56	89	48	47
Mechanical Engineering (incl. I.M.)	37	27	22	43	61	52	35	18	31	51	51	72	46	61	50	75	55	45
Dartmouth																		
Humanities (incl. Speech & Drama)	56	18	15	31	27	33	26	06	27	18	24	59	24	55	41	66	38	29
Natural Sciences	28	08	07	27	36	25	13	03	13	25	31	50	16	39	29	55	32	24
Prof. Fields and Administration	37	21	32	25	33	13	34	06	15	21	24	33	18	26	17	39	16	23
Social Sciences (incl. Geography)	40	12	12	28	24	31	18	05	19	27	28	58	17	58	33	62	43	27
MIT																		
School of Engineering*	33	35	25	50	62	60	44	20	38	42	48	71	55	61	37	78	58	47
School of Science	16	37	27	59	53	44	45	25	52	43	56	84	48	69	59	79	54	51
School of Humanities and Social Studies	17	24	17	55	44	63	44	09	34	36	45	71	40	78	52	82	45	43
Rutgers																		
Humanities	35	14	11	30	15	26	24	04	23	17	24	50	22	61	41	60	37	25
Natural Sciences	11	16	21	47	47	55	22	09	22	26	38	66	34	55	38	76	39	35
Social Studies	44	19	09	30	28	33	25	07	19	25	28	57	27	53	44	64	42	29
Stanford																		
Humanities (incl. Architecture)	15	19	14	47	38	42	40	12	30	29	33	65	28	78	35	62	47	36
Social Studies (incl. Ed., ROTC, Misc.)	42	38	38	45	48	55	39	18	34	42	39	60	43	65	42	65	42	43
Natural Sciences	27	33	28	50	59	53	45	27	41	40	49	76	55	71	54	80	59	49

[1]Assignment of department to division varies from college to college; division content in each case by catalog groupings.
*Includes 1 Arch. and 9 Industrial Management Ratings

ratings) against 43% for Electrical Engineering faculty. In general, the engineering, natural sciences (except biology), and mathematics faculty were either more hesitant to rate students or less concerned to observe, with economics and history also running high in omits.

How the factor cluster areas vary by department of rater is more readily apparent from the data in Table 16, where departments are grouped into divisions. Frequencies of omits for the social sciences follow very closely the proportions for the total group, as, indeed, do the frequencies for the Natural Sciences (with possible exceptions toward greater number of omits in the intellectual values and open-mindedness areas). The proportion of omits for professional fields are lower in all factor clusters than are the corresponding proportions for the total group with the exception of intellectual ability, and the omits for the humanities are lower than those for the total except for popularity. The engineers, as previously noted, run higher proportions across all clusters, with the greatest discrepancy from total proportions in the areas of intellectual values, likeability, and maturity. For those interested in division-by-institution breakdowns, appropriate data for seven of the institutions (those with reasonable N's in each division) are presented in Table 17. Variation by division seems smaller at Amherst, Dartmouth, and MIT and larger at Caltech, Rutgers, and Stanford (at Cornell, the discrepant division had only eight cases).

Some Parting Speculations

These results could be interpreted to add force to the argument for reinstatement of grades as the criterion in which faculty really believe, with the additional proviso from the previous studies in this series that there are

less able students whose socio-ethical heart seems in the right place, and who are therefore nice to have around--or, at least, are not resented their place on the campus. A more reasonable possibility is that the qualities sought in the basic goals of the study are not amenable to the relatively superficial surface analysis employed, that deeper probing into the personality organization and functioning of the individual student is necessary. Still another possibility is that the really desirable student emerges from a dynamic interaction of traits, producing a number of unique structures but in toto resisting fragmentation into the unique trait components which the design employed may produce. If so, manageable ways and means to describe the student as a whole need to be sought. Also, faculty may need their attention directed to specific events or may need their opportunity to observe and study students enlarged.

The nature of the criterion employed here may limit the results. With virtually no student for whom some faculty member did not vote as desirable, assignment to the "not desirable" group means a refutation of the judgment of some (albeit a minority of) faculty members. Criteria of general visibility and consensus are imposed on the criterion of desirability. Those students on whom many agree may be the conservative, safe bets. The description which Frederiksen has constructed of Winston Churchill as a student (Frederiksen, 1954) would indicate that the promise of such a student would, at the least, be hotly controversial. For future studies, the implication is that a simple trait-by-trait description of students on the one hand, and relatively global identification of a general quality of desirability on the other, is not enough. The accuracy or uniformity of perception of traits is not sufficiently clear among faculty, even on those students who a great many agree are highly desirable.

At this level, indeed, it may be reasonably suspected that many of those students who stand out do so because of some variable not tapped by this study. A visible and acceptable role in student government, a single, but public, acclaimed stand on some issue dear to faculty, a famous father, or the absence of obvious sin (together with good grades) may be at the root of a consensus of desirability. The absence of clear-cut trait patterns from the ratings would suggest that that level of analysis is not the one which explains the discrimination among students. One remedy would be to search out the factors that contribute to (1) visibility, and (2) desirability; another, and more sophisticated approach, might be to identify, faculty member by faculty member, who is desirable, what complex of traits is involved in this judgment (rather than simply all the things the student happens to be), and what actual characteristics of the student and the judge help explain the judgment and its basis. Finally, it is apparent that the problem is broader than that of the desirable student: it may be better to ask what is a desirable student population in the department (Fernandes, 1964) or in the college as a whole, or, what types (key combinations of traits) may produce environments of different sorts. Indeed, it is possible that some individuals with unattractive qualities may contribute in positive ways, for both faculty and students, to the department or campus milieu.

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Appendix A

The Student Nomination Form

EDUCATIONAL TESTING SERVICE

FORM FN-2 (1962)

Student Nomination Form

Your Name _____ Rank _____

Teaching Department _____ No. Years at Institution _____

Today's Date _____

TN 000 181

On the inside page are listed the names of a sample of students from a current class at your institution who are being studied in a cooperative project between the institution and the Educational Testing Service. The research is designed to capitalize on insights of the teaching faculty concerning characteristics of desirable students which may or may not be apparent in grades or test scores. Your assistance is a most important part of the larger research.

The information requested will be regarded as confidential and will be used for research purposes only.

A2

Instructions

1. Please scan the following list of students and place a check mark by the name of each student you know or with whom you recall having had any contact.

Then answer the item at the bottom of this page and the questions on the facing page.

(Names of students in the sample to be rated are entered here)

2. Please review those names you have checked and place a second check mark by the names of students you feel you know particularly well.

3. The statements below ask for nominations of various kinds. Note that nomination categories generally become less exclusive as one moves down the page. In making these nominations, please use only the students named on the facing page whom you feel you know well enough to nominate for the distinction or statement of promise given. You may nominate, in each instance, as many of the students named as you like, or you may make no nominations. You may nominate a given student more than once. Nominations may be recorded by name or by the student number on the preceding page.

a. Of those named on the preceding page, these students seem likely to attain important positions of leadership and to make substantial contributions to society after college:_____

b. While not necessarily likely to attain fame as important leaders of society, these students seem to epitomize the highest ideals of the institution in scholarship, academic achievement, citizenship, and personal growth:_____

c. These students seem particularly suited for graduate study in their field of interest:_____

d. These students, while possibly not achieving at the highest levels in absolute terms, have exhibited a laudatory amount of ***intellectual*** growth from the college experience:_____

e. These students, while possibly not achieving at the highest levels in absolute terms, have demonstrated a laudatory amount of ***personal and social*** growth from the college experience:

f. These students from the list on page 2 are persons I know that have not been nominated above, yet are persons I feel that represent well some qualities and characteristics which make them desirable students for this institution:_____

Appendix B

Sample Data from the Student Nomination Form

Table B1

Frequency Distribution of Nominations to the Six Desirability Categories for a Subsample of Amherst '62 Students

Student Code No.	No. Faculty Knowing & Nominating	No. Faculty Knowing, not Nominating	Number of Nominations: Substantial Contribution	Epitomizing Ideals	Graduate Study	Intellectual Growth	Personal Growth	Otherwise Desirable
001	15	10	2	1	0	2	7	3
007	5	5	1	2	3	2	2	0
013	0	6	0	0	0	0	0	0
019	8	6	0	0	0	4	2	3
025	30	6	18	16	25	2	1	1
031	17	6	3	12	10	1	1	2
037	5	4	2	2	1	0	3	1
043	5	9	1	1	2	2	1	1
049	7	2	1	0	3	1	1	2
055	4	4	1	1	4	0	0	0
062	9	3	2	4	3	0	1	2

Appendix C

Analyses of the Factor Scores from the Student Rating Form

Appendix C

It should be noted at the outset that the data presented in this appendix are limited by the low reliability of the factor scores (see Table 10, p. 27). Nevertheless, for those interested in knowing where high risk speculations may lead, the results of the several analyses with the factor scores are presented here with interpretative comments.

The 18 factors have been described in some detail in a previous report (Davis, 1964c); the procedures for obtaining the factor scores conducting the analyses have been outlined on pages 5-7 of the present report. For aid in interpreting the tables, however, the following factors are represented: dependability (DEP); intellectual ability (IA); conformity (CNF); intellectual values (IV); ethicality (ETH); motivation (MOT); likeableness (LIK); extraversion (EXT); self-sufficiency/creativity (SSC); open-mindedness (OM); altruism (AIT); maturity (MAT); popularity (POP); freedom from anxiety (ANX); grade performance (GRD); tested scholastic aptitude (SA); self-insight (SI); and freedom from status-centeredness (STC). It should be noted that the grade performance and tested scholastic aptitude factors are drawn principally from actual grades and test scores, rather than from the ratings of the student on the 80 traits.

Tables C1 and C2 present the significant F ratios for the various tests made. Tables C3 through C7 present the directions of the differences for the instances of significance shown in Table C2, with the serial numbers assigned to the classification column in Table C2 repeated as appropriate for identification of the same classifications in Tables C3 through C7.

Factor scores against Nomination Form categories. Table C1 summarizes the results of the analyses of variance concerned with testing for relationship between the 18 factor scores vs. frequency of nomination to each of the six

desirability categories of the Nomination Form (for definition of these categories, see p. 2).

Though these analyses are, as noted, limited by the low reliabilities of the factor scores, several findings are of some interest. First (see particularly the data for the combined group), nomination to the most selective categories (the first three) does appear to be related to the grades factors, to the scholastic ability (IA and SA) factors, and to the motivation factor. The results are most consistent and logical for the graduate study category (category 3), where ratings identify those nominated as more dependable, able, interested in ideas, and motivated, as well as higher on the factors formed principally by grades and tested ability (SA). It would seem generally that the graduate study nominations are more clear-cut, more explicable. This finding is certainly reasonable, considering the probable values of the raters.

In the bottom three categories of desirability--intellectual growth, personal growth, and the "other" desirability category--the results for the groups separately and combined seem to indicate that these categories (particularly the personal growth category, category 4) tend to be a dumping ground for nice fellows for whom some of the positive things said about those nominated to higher categories cannot be said. The factor score directions are reversed in many instances from their directions for higher categories. Those cited for intellectual growth stand higher on intellectual values and grades while those cited for personal growth stand higher on ethicality, extraversion, altruism, and popularity, but lower on ability and freedom from status-centeredness. Such findings tend to support the specific validity of the ratings. It should be noted that the last category is exclusive, as it could contain only persons considered desirable but who do not fit previous categories; in the combined group, these students tended to be rated lower on dependability and conformity but higher on ethicality.

Those areas found previously (Davis, 1964b; Davis, 1964d) to be related to desirability separate and apart from achievement--likeableness, ethicality, open-mindedness, altruism, and freedom from status-centeredness--generally wash out when placed against the first four Nomination Form criteria. Although there are occasional groups whose scores appear significant, there seem to be no logical patterns of or explanations for the scores when considered factor by factor, except for the grades and ability factors, where the principal loadings are actual grades and test scores rather than trait ratings.

Perhaps the absence of consistent patterns in the other areas, although this may reflect differences among institutions, is a function of the low inter-rater agreement. For Stanford, the nominations data are sparse, and the criterion groups themselves could be at fault. The most striking feature of the data, however, is the absence of clear confirmation of the previous findings (obtained when the criterion of desirability was the judgment of the rater himself rather than the consensus of his colleagues). Beyond the clearly cognitive elements noted in the previous and in the present analyses in the body of this report, no clear and consistent patterns of desirable traits emerge. Components of desirability beyond those of ability and performance appear elusive. It is likely that this is a function of the very low reliability of the factor scores drawn from the Rating Form, but it cannot safely be argued that the hypothesized relationships would emerge had the factor scores been reliable.

Factor scores against institutional groups. With regard to differences among institutional groups (Tables C2 and C3), it would appear, first, that on 10 of the 18 factors there are differences among the institutions. Some of the differences are readily interpretable: for example, the engineering groups (and Amherst, where the freshman group no doubt contributes) are

generally rated lower on intellectual values; or the scholastic aptitude (SA) scores, heavily weighted with actual SAT scores, follow the differences in institutional means. Why Caltech faculty should rate their students high on self-sufficiency/creativity and MIT faculty rate their students low on the same trait, or why RPI faculty give their students low ratings on motivation, open-mindedness, maturity, popularity, and self-insight, is not clear. Students may behave differently, or faculty may hold cherished prejudices, and interpretation of these differences would in most cases seem to be best drawn in a framework of intimate knowledge of the institutions, if indeed the differences are real.

The differences between the Amherst freshmen vs. the upper-class groups seem more readily understandable. The faculty rate freshmen lower on intellectual ability and values, ethicality, maturity, and grades, though the tested scholastic aptitude factor (SA) places this group quite high.

Factor scores against student major. The differences among students grouped by area of major (Table C4) are most interesting, where on half of the 18 factors the means for the groups differ. The professional fields group, though generalizations must be limited by the small numbers, are rated highest on conformity and grades, and lowest on intellectual values, freedom from anxiety or status-centeredness, and (actual) scholastic ability. Engineering and the natural sciences groups are pretty much alike, with notable differences from students in other areas in their superiority in scholastic ability and freedom from anxiety, and their lower standings on intellectual values and self-insight; engineers appear more concerned with personal status than do natural science majors. Humanities majors are rated high on intellectual values. Social science majors fall close to the all

students means except on intellectual ability (higher) and (actual) scholastic aptitude (lower). The several juxtapositions of the intellectual ability vs. the scholastic aptitude may result from different standards among the groups which are unrelated to actual or absolute ability levels: e.g., the natural science majors are judged against more rigorous standards.

Factor scores against Myers-Briggs Type Indicator classifications. When the 16 MBTI types are considered separately (Table C5) differences appear on five of the 18 scales. For the motivation factor, a combination of introversion and intuition seems to be most favorable, with introversion the more important element. High ratings are assigned to 3 IN-- types, INFP, INTJ and INFJ, and to 2 IS-- types, ISTP and ISFJ, and low ratings to 2 E-F- types, ESFP and ENFJ. The types viewed as most open-minded are 3 --FJ types, ENFJ, INFJ and ESFJ (whose extraversion of feeling makes them all value surface harmony), and ENFP (whose quick perception of the views of others is easily mistaken for agreement). ES-P types are seen as least open-minded. Concerns for personal status are felt to mark the E-TP groups particularly, but not the ISFP or the INT- groups.

Of more interest are the differences in grades, scholastic ability, or grades vs. scholastic ability. The high achievers are the I-TJ groups and the ENTP's, the low achievers include all combinations involving S with P, the E-TJ groups, and the ENFP's. On scholastic aptitude, the well-known distinction between the N's (high) and the S's (low) appears. However, if the difference in the standard score levels on the grades vs. the scholastic aptitude may be taken as a rough index of over- or underachievement, the ESTJ's, ESFJ's, ESFP's, and ISTJ's in this sample overachieve, while the ENTJ's, INTP's, and ENFP's underachieve. The ESFP's and ESTJ's come off better on this

basis than in Myers' (1962, p. 47) analysis of a larger sample on grades and SAT alone without ratings, and the ENTJ's come off worse.

For the four basic types separately, the introverts are rated higher on motivation, grades, scholastic ability, and freedom from status-centeredness. The intuitives are higher on intellectual values as well as (as expected) on scholastic ability, but are less conforming or popular than the sensing types. The feeling types are rated as more open-minded, though less "extroverted" in the meaning of the rating scale factor, which in this context may simply mean less forceful. Perceptives are rated, amazingly, less open-minded or altruistic than judging types, but more able. Open-mindedness would seem a reasonable component of the perception preference as defined by Myers. This contrary result, significant at the .01 level, may mean that those who focus on adding and incorporating new experience, rather than in coming to conclusions, in a situation where the instructor is attempting to lead students to certain judgments, are viewed as rigid in their failure to accept these promulgated points of view. This point needs further, careful investigation. The development of the judging function is indeed an important goal of higher education, but open-mindedness is also valued. If this appears to be only a desire for students to be "open" to the instructors' views and not to extraneous stimuli, there might be utility in soul-searching.

Factor scores against faculty characteristics. Only three scales produce different levels for the classification of faculty by rank (Table C6). Instructors and professors see students as less conforming than do the two middle groups. The major differences in level of ratings of open-mindedness and self-insight seem to come from the nondescript "other" group, a collection of graduate teaching assistants, administrators, and others, and are thus difficult to interpret.

Half of the 18 scales are related to the teaching field of the rater (Table C6). These differences may indeed be as much a function of student rated as of the faculty member, for by and large instructors rated students in their courses. Nevertheless, it is interesting to note the extreme levels in the nonacademic group, who produced the highest means on intellectual values, extraversion, altruism, maturity, and self-insight, but lowest on freedom from status-centeredness, grades, and scholastic ability. Engineers and natural scientists tend, in contrast to social scientists, to take a harsher view of their students' ability (intellectual ability vs. scholastic aptitude).

Factor scores against extent and kind of rater-ratee contact. Of the 18 factors, three appear quite frequently to be related to type of contact between faculty member and student (Tables C2 and C7); these are intellectual values, self-sufficiency/creativity, and altruism. Students high on intellectual values must be well known, preferably through conference or advisory session or through observation in the dormitory or on the campus. Students high on self-sufficiency/creativity must also be known well or extensively in contact other than through class, advisory, or academic consultation. Perception of the student as altruistic is also enhanced by contact; absence of current contact depresses ratings, and knowing in the social context of the campus enhances ratings.

The large number of differences which appear as a function of degree or type of rater contact with students underscores the importance of this variable. In some cases experience or contact appears to lower the level of rating (e.g., motivation, open-mindedness, popularity, and freedom from status-centeredness); in other cases, knowledge of or contact with the student raises his rating

(e.g., conformity, intellectual values, extraversion, self-sufficiency/ creativity, altruism, self-insight). In some cases, familiarity may breed contempt; in others, time or contact appears an important element in permitting higher ratings. This may suggest qualities which prompt limited vs. continued acquaintance, of course, but the qualities seem more likely to represent the assumptions an instructor would be prompted to make upon casual vs. extended contact.

Other data here would suggest that the context in which an instructor sees or knows a student is important. This is consistent with findings elsewhere (i.e., Wherry, 1952). For example, students known through extracurricular activities (Classification 15, Table C7) are rated much higher than those not known in this context on conformity, extraversion, self-sufficiency/creativity, altruism, and self-insight. Those known through academic consultation are viewed quite high on grades and self-insight, but quite low on self-sufficiency/ creativity and freedom from anxiety. Certainly the reasons behind student or faculty member assuming the initiative for making a particular kind of contact are indicative of the situation and may be outlined by these differences; yet, the fact of particular kind of contact may bias the faculty member.

The fact that the nature or extent of contact affects level of ratings is not particularly damaging to validity of ratings; each student has a chance to experience a variety of kinds of contact, and those he "chooses" may indeed belie his underlying traits. On the other hand, since one may expect considerable variability among faculty members in the nature or extent of contact, the limited inter-rater agreement seems more plausible.

Table C1

Summary of Analyses of Variance: Significant F Ratios and Direction of Difference for Faculty Ratings against Nomination Form Criteria

Group	Category	$N_<$	$N_>$	A DEP	B I A	C CNF	D I V	E ETH	F MOT	G LIK	H EXT	I SSC	J O M	K AIT	L MAT	M POP	N ANX	O GND	P S A	Q S I	R STC
Amherst '62	1	42	55	> 4.1														>20.6*		> 5.9	
	2	48	49															> 6.2			
	3	37	60				> 4.1											>13.9*		> 4.0	
	4	52	45		< 5.2		> 4.1														
	5	62	35					> 7.7*											< 4.3		
	6	42	55		< 4.4					> 4.6									< 7.0*		
Amherst '65	1	46	27															>21.3*	> 4.7		
	2	33	40										>10.3*	< 4.6				>22.1*			
	3	43	30										> 5.7					>17.6*	> 4.2		
	4	33	40													< 5.8		> 5.5	> 9.2*		
	5	32	41					> 4.8													
	6	34	39		> 4.4	< 5.3		> 5.2													
Caltech	1	65	49						> 5.8			> 7.5*	>10.3*					>22.4*		> 5.5	
	2	51	63						> 5.1									>17.9*			
	3	47	67		> 8.9*				>10.6*	> 6.2								>19.0*			
	4	65	49									> 4.2	> 7.8*					>12.2*			
	5	42	72			> 5.3								> 7.6*							
	6	61	53		< 4.2			> 7.0*		< 5.8							< 5.2	< 7.0*			
Cornell	1	30	27		>13.3*		< 4.6											> 6.2			
	2	22	35							> 4.9	> 6.2							> 8.6*			
	3	26	31		> 4.4						> 8.1*							>18.0*			
	4	26	31																<11.0*		
	5	33	24	> 5.8							> 5.6								< 8.9*		
	6	34	23	< 4.4						< 4.7								<11.5*			
Dartmouth	1	64	73				> 6.9*						< 7.2*					> 5.0	>10.8*		
	2	54	83															>13.5*	> 8.0*		
	3	57	80				> 5.2				> 4.3							>12.7*	>40.3*		> 5.2
	4	40	97															>10.4*			
	5	46	91		< 9.0*	> 4.8					> 9.5*		> 9.5*		>12.3*				<10.9*		
	6	40	97																> 9.3*		
RPI	1	25	26			< 5.4	< 8.0*							> 6.0				> 5.8			< 5.8
	2	17	34		> 9.9*		< 4.5														
	3	27	24		> 5.0																
	4	22	29										> 5.4								
	5	22	29																		
	6	20	31			< 4.6				>11.5*											
Rutgers	1	41	31			< 4.4					> 9.0*							> 9.5*			
	2	32	40													> 7.3*		> 7.6*			
	3	27	45	> 4.4																	
	4	35	36				> 4.3	> 5.0													
	5	21	51							> 4.5							> 4.9				
	6	25	47					< 5.0				< 5.5							> 5.4		
Stanford	1	31	23			< 5.3													< 8.7*		
	2	36	18																		
	3	27	27								<10.0*							> 6.4		< 4.7	
	4	23	31																		
	5	29	25							> 4.4									< 4.7		
	6	35	19													< 5.2			< 6.8		
COMBINED GROUP	1	344	311		> 5.2	< 8.0*			> 4.2			> 4.4						>76.4*	> 4.3		
	2	293	362						> 7.7*									>69.9*			
	3	291	364	> 4.5	> 5.5		> 6.3		>18.8*									>88.0*	> 7.0*		
	4	297	358				> 7.4*											>18.8*			
	5	287	368					> 8.7*			> 8.3*			> 4.4		> 5.1			<16.4*		< 4.3
	6	291	364	< 7.5*		< 8.4*		> 8.2*													

*Significant at .01 level; unstarred items significant at .05 level.

Table C2

Summary of Analyses of Variance: Significant F Ratios for Factor Score Differences within Selected Classifications Involving Institution, Student Major, Indicator Types, Class of Rater, and Contact between Student and Rater (N = 911)

Classification	df	FACTOR A DEP	B I A	C CNF	D I V	E NTH	F MOT	G LIK	H EXT	I SOC	J O M	K ALT	L MAT	M POP	N ANX	O GRD	P S A	Q S I	R STC
1. Institution (eight)	7/903				2.61	2.94*	2.15			2.79*	2.65		2.86*	3.30*		4.97*	78.56*	2.30	
2. Amherst fr., Amherst sr., all others combined	2/908		3.10		5.61*	6.07*	4.03				3.81		3.94			5.43*	6.30*	9.67*	
3. Amherst fr. vs. all others	1/909		5.05		9.39*	8.06*							5.04			10.02*	12.28*		
4. Students' major area	4/906		2.93	2.90	6.72*	2.46									2.59	3.85*	58.24*	3.19	2.56
5. The sixteen indicator types	15/895						2.11				1.95					2.24*	10.03*		3.23*
6. Indicator: E's vs. I's	1/909						9.66*									4.75	16.99*		20.92*
7. Indicator: S's vs. N's	1/909			7.22*	4.83									8.90*			110.90*		
8. Indicator: T's vs. F's	1/909								5.66		4.00								
9. Indicator: J's vs. P's	1/909										11.28*	3.92					10.06*		
10. Rank of rater	4/906			2.79							2.57							4.90*	
11. Area of rater's teaching field	4/906		3.29		4.65*				3.12			4.83*	2.97			2.82	9.81*	4.40*	2.71
12. Number "unknown" responses	3/907		3.07	13.12*	15.77*		11.47*		7.93*	24.48*	6.78*	49.29*	2.73	2.91		3.23		9.94*	2.65
13. Acquaintance score quartile	3/907			4.49*	17.41*		3.02		8.77*	11.45*	5.08*	18.76*		3.59	5.12*	3.99*			
14. Length of time student known	7/903			2.07	4.61*					2.40		6.00*						5.21*	
15. Kind of present contact with S	7/903			3.29*					3.70*	3.24*		5.13*	3.82*		2.03	2.90*	4.46*	3.92*	
16. Student in one class vs. not so	1/909				10.35*		6.60			5.20		7.35*				5.25	8.51*		
17. Student in more than one class vs. not so	1/909				5.95		9.70*					4.65				4.95	25.91*		
18. Student known via assignment review vs. not so	1/909																11.43*		
19. Student known via lab work vs. not so	1/909		5.51	13.86*					8.32*										
20. Student known via conference on acad. work vs. not so	1/909		4.67		15.04*				10.05*	4.88		14.36*			11.16*	5.55	6.07		
21. Student known via conference on personal matters vs. not so	1/909				18.86*		6.18		17.32*	5.19		35.44*			7.92*			5.36	
22. Student known as advisee vs. not so	1/909				12.60*							5.42						17.39*	
23. Student known via other faculty vs. not so	1/909				8.53*						4.12					7.23*			
24. Student known via observation, dorm or campus, vs. not so	1/909		6.57	8.74*	10.27*		8.71*		5.89	24.21*		22.25*	4.31	14.20*					6.08
25. Student rated before exam, after exam, or date unknown	2/908		4.58			3.06				3.61							21.37*		

*Significant at or beyond the .01 level of confidence

Table C3

Factor Score Means for Institutional Groups Where Analyses of Variance Yield Significant F Ratios

Classification	N	FACTOR B IA	D IV	E ETH	F MOT	I SSC	J OM	L MAT	M POP	O GRD	P SA	Q SI
1. Institution												
Amherst	210		482	474	489	476	491	495	508	486	522	522
Caltech	153		471	507	520	516	516	507	518	471	596	492
Cornell	89		479	482	528	472	533	504	498	475	502	484
Dartmouth	161		517	504	508	495	498	507	515	520	482	515
MIT	66		472	497	519	458	537	462	515	472	569	506
RPI	58		485	511	479	491	499	453	446	511	454	478
Rutgers	90		502	519	507	500	509	500	502	547	333	486
Stanford	84		496	486	502	480	520	497	501	499	493	496
2. Amherst vs. Others												
Others	701	501	491	501	511		514	496		500	498	496
Amherst Seniors	106	489	506	480	478		492	515		511	504	549
Amherst Freshmen	104	474	456	468	499		489	473		459	540	496
3. Amherst Freshmen vs. All Others												
Others	807	500	493	499				499		500	499	
Amherst	104	474	456	468				473		459	540	
TOTAL GROUP	911	497	489	496	505	488	508	496	505	497	503	502

Table C4

Factor Score Means for Students Grouped by Area of Academic Major, Where Analyses of Variance Yield Significant F Ratios

Classification	N	B I A	C CNF	D I V	E ETH	N ANX	O GRD	P S A	Q S I	R STC
4. Area of student's academic major										
Engineering	356	491	498	470	492	513	478	524	490	493
Humanities	95	489	488	532	477	480	510	463	530	498
Natural Sciences	243	490	475	489	511	507	506	555	498	519
Professional Fields	15	498	541	464	512	480	561	318	502	468
Social Sciences	202	521	485	502	491	496	504	435	516	493
TOTAL	911	497	489	489	496	503	497	503	502	500

NOTE: Humanities includes art, languages, English, music, philosophy, and religion.
Natural Sciences includes the natural sciences and mathematics.
Professional Fields includes business administration, city planning, education, journalism, and speech.
Social Sciences includes American studies, anthropology, economics, history, political science, psychology, and sociology.

Table C5

Factor Score Means for Students Grouped by Myers-Briggs Type Indicator Classifications
Where Analyses of Variance Yield Significant F Ratios

Classification	N	C CNF	D I V	F NOT	H EXT	J O M	K ALT	M POP	O GRD	P S A	R STC
5. The 16 Indicator Types											
INTJ	121			529		514			531	543	526
INTP	86			497		472			490	542	537
INFJ	67			520		536			500	511	496
INFP	70			536		491			496	539	505
ENTJ	69			495		506			474	537	512
ENTP	72			495		496			520	525	444
ENFJ	58			461		537			500	500	472
ENFP	46			505		541			465	532	477
ISTJ	63			500		514			534	474	521
ISTP	18			531		515			457	423	475
ISFJ	32			528		507			486	498	494
ISFP	27			489		489			457	475	542
ESTJ	92			500		515			476	424	496
ESTP	29			505		483			457	498	468
ESFJ	48			514		520			500	428	482
ESFP	23			422		479			483	421	492
6. Type: E's vs. I's											
E	427			494					487	487	481
I	484			517					504	517	516
7. Type: S's vs. N's											
S	322	500	477					519		452	
N	589	482	495					498		531	
8. Type: T's vs. F's											
T	550				499	502					
F	361				481	518					
9. Type: J's vs. P's											
J	550					518	494			494	
P	361					494	480			517	
TOTAL GROUP	911	489	489	505	492	508	488	505	497	503	500

Table C6

Factor Score Means for Ratings Grouped by Rank and Teaching Field of Rater
Where Analyses of Variance Yield Significant F Ratios

Classification	N	B I A	C CNF	D I V	H EXT	J O M	K ALT	L MAT	O GRD	P S A	Q S I	R STC
10. Rank												
Instructor	111		471			500					517	
Asst. Prof.	200		501			491					489	
Assoc. Prof.	222		495			510					482	
Professor	285		478			518					511	
Other	93		500			524					533	
11. Teaching Field												
Engineering	217	496		471	495		481	483	483	519	489	494
Humanities	231	487		500	481		502	502	498	498	506	505
Natural Sci.	181	483		484	500		464	481	519	535	493	507
Nonacademic	71	509		532	526		514	513	472	475	554	460
Social Sci.	211	516		484	483		492	507	498	474	501	505
TOTAL	911	497	489	489	492	508	488	496	497	503	502	500

NOTE: Departments assigned to areas as defined in footnote for Table C4.

Table C7

Factor Score Means for Ratings Grouped in Various Classifications of Rater-Ratee Contact, Where Analyses of Variance Yield Significant F Ratios

Classification	N	B IA	C CNF	D IV	E ETH	F MOT	H EXT	I SSC	J OM	K ALT	L MAT	M POP	N ANX	O GRD	P SA	Q SI	R STC
12. Number of unknown responses																	
1st Quartile	189	493	504	531		467	518	520	505	552	509	500		512		540	482
2nd Quartile	231	488	509	496		502	501	523	485	507	490	492		508		491	498
3rd Quartile	242	515	489	481		516	485	467	513	457	503	509		488		481	514
4th Quartile	249	490	456	457		528	470	451	529	451	483	518		482		505	500
13. Acquaintance score																	
1st Quartile	162		504	541		491	514	501	513	525		522	492	517			
2nd Quartile	193		499	495		493	514	521	483	509		492	486	509			
3rd Quartile	283		490	480		516	483	485	510	483		497	506	491			
4th Quartile	273		471	463		513	473	460	522	456		514	520	480			
14. Length of time student was known																	
None	4		444	444				491		510						516	
1 Quarter	105		476	480				470		449						490	
1 Semester	209		476	463				473		479						497	
2 Quarters	54		470	500				475		466						503	
1 Year	240		494	479				488		486						500	
1-2 Years	172		495	509				503		505						479	
2-3 Years	92		509	528				510		522						554	
3 or More Years	35		515	513				525		538						565	
15. Kind of present contact with student																	
None	94		473				480	493		461	482	500	506	528	475		
Class of less than 15	164		489				509	489		500	518	496	491	508	500		
Class of 15+	469		489				480	483		481	483	512	490	486	499		
Advisor	46		493				509	470		499	501	515	496	531	513		
Academic consultation	31		502				490	440		462	493	460	554	543	548		
Personal consultation	8		489				516	537		512	544	520	461	565	505		
Extra-curricular activities	37		554				554	546		564	520	476	466	497	581		
Incidental	62		457				502	518		510	532	490	543	536	495		
16. As student in one class	494			478	515			480		480				488	513		
Not as student in one class	417			501	496			498		499				506	492		
17. As student in two or more classes	324			501	490					499				508	478		
Not as student in two or more classes	587			482	514					483				490	517		
18. Through review of assignments or exams	452														491		
Not through review of assignments or exams	459														515		
19. Through laboratory work	163	478	515				514										
Not through laboratory work	748	501	483				487										

Table C7 (Continued)

Classification	N	B I A	C CNF	D I V	E ETH	F MOT	H EXT	I SSC	J O M	K ALT	L MAT	M POP	N ANX	O GRD	P S A	Q S I	R STC
20. Through conference on academic work	406	488		505			504	498		502			491	507	493		
Not through conference on academic work	505	504		476			482	481		476			514	488	511		
21. Through conference on other matters	185			521		487	521	505		528			485			520	
Not through conference on other matters	726			481		510	485	484		478			508			498	
22. As advisee	98			527						511						549	
Not as advisee	813			484						485						497	
23. Through other faculty reactions	147			514					492					521			
Not through other faculty reactions	764			484					512					492			
24. Through observation, dorm or campus	81	466	521	528		470	520	549		540	519	548					469
Not through observation, dorm or campus	830	500	486	485		509	489	482		483	494	501					502
25. Date ratings completed																	
None given	74	530			522			504							558		
Before exams	642	491			491			482							488		
During or after exams	195	504			500			503							531		
TOTAL GROUP	911	497	489	489	496	505	492	488	508	488	496	505	503	497	503	502	500